Title (en)

MODEL PREDICTIVE CONTROL HAVING APPLICATION TO DISTILLATION

Title (de)

MODELLGESTÜTZTE PRÄDIKTIVE REGELUNGSMETHODE MIT ANWENDUNG IN DESTILLATIONSPROZESSEN

Title (fr)

REGLAGE DE PREDICTION DE MODELE APPLIQUE A LA DISTILLATION

Publication

EP 1917081 B1 20141029 (EN)

Application

EP 06801232 A 20060811

Priority

- US 2006031344 W 20060811
- US 20314005 A 20050815

Abstract (en)

[origin: US2007038333A1] A method of controlling a distillation column having control valves to control both reflux and the vapor rate within the column. In accordance with the present invention, a temperature sensed in a top section of the column is magnified and utilized within the model predictive controller so that control is more aggressive as temperatures increase beyond a threshold temperature. Additionally, in the distillation column, or in fact in any other system in which two or more manipulated variables control two or more common controlled variables, special modeling techniques are utilized to make controller tuning easier to accomplish. In such modeling techniques, each manipulated variable is assumed to be able to have an effect on a controlled variable by a single step response model and other step response models are utilized so that the other manipulated variable(s) that also would have an effect on the same controlled variable are taken into account by the controller as feed forward variables.

IPC 8 full level

B01D 3/42 (2006.01); **G05B 13/00** (2006.01)

CPC (source: EP US)

B01D 3/4211 (2013.01 - EP US); **B01D 3/4272** (2013.01 - EP US); **F25J 3/0295** (2013.01 - EP US); **F25J 3/04793** (2013.01 - EP US); **F25J 3/04848** (2013.01 - EP US); **G05B 13/042** (2013.01 - EP US); F25J 2280/50 (2013.01 - EP US)

Citation (examination)

DOUGHERTY D; COOPER D: "A practical multiple model adaptive strategy for multivariable model predictive control", CONTROL ENGINEERING PRACTICE JUNE 2003 ELSEVIER LTD GB, vol. 11, no. 6, June 2003 (2003-06-01), pages 649 - 664, ISSN: 0967-0661, [retrieved on 20110523], DOI: DOI:10.1016/S0967-0661(02)00170-3

Designated contracting state (EPC)

DE FR GB

DOCDB simple family (publication)

US 2007038333 A1 20070215; **US 7292899 B2 20071106**; BR PI0614404 A2 20110329; BR PI0614404 B1 20170214; CA 2619169 A1 20070222; CA 2619169 C 20110104; CA 2696644 A1 20070222; CA 2696644 C 20140311; CN 101267868 A 20080917; CN 101267868 B 20101027; CN 101893850 A 20101124; CN 101893850 B 20121003; EP 1917081 A2 20080507; EP 1917081 B1 20141029; EP 2327463 A1 20110601; EP 2327463 B1 20140115; WO 2007021912 A2 20070222; WO 2007021912 A3 20080207

DOCDB simple family (application)

US 20314005 A 20050815; BR PI0614404 A 20060811; CA 2619169 A 20060811; CA 2696644 A 20060811; CN 200680034104 A 20060811; CN 201010173776 A 20060811; EP 06801232 A 20060811; EP 10195377 A 20060811; US 2006031344 W 20060811